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Checking On A Few Spelling Checkers

by James Bierman and Eli Hollander

Spelling checkers are basically simple applications that compare each word in a document to a list of words in a dictionary, signal the user about discrepancies, and allow the substitution of corrected words. MacLightning (\$99.95, from Target Software Inc., 14206 SW 136th St., Miami, FL 33186, 800-MAC-LITE), and Spellswell (\$49.95, from Greene Johnson Inc., 15 Via Chular, Monterey, CA 93940, 408-375-2828) are two recently introduced products that offer interesting alternatives to the existing choices of spelling checkers for the Macintosh.

Like Turbo Lightning for the IBM PC, MacLightning's chief virtue is its ability to function in an interactive "on the fly" mode. MacLightning installs in your System file as a desk accessory and adds a pull-down menu to the menu bar of any application in which you are working. If you make any typing errors, MacLightning generally catches them on the spot.

As a test, we set out to type the beginning of James Joyce's *Ulysses* in Microsoft Word, with the MacLightning spelling checker installed as a desk accessory and functioning in its interactive mode. As we typed, we heard 22 warning beeps signaling words unknown to MacLightning (see words highlighted in **bold**) by the time we finished the first few sentences:

Stately, plump **Buck Mulligan** came from the **stairhead**, bearing a bowl of lather on which a mirror and a razor lay crossed. A yellow **dressinggown**, **ungirdled**, was sustained gently behind him by the mild morning air. He held the bowl aloft and intoned:

-Introlbo ad altare Del.

Halted, he peered down the dark winding stairs and called up **coarsely**:

-Come up, **Kinch**. Come up, you fearful jesuit.

Solemnly he came forward and mounted the round **gunrest**. He faced about and blessed gravely **thrice** the tower, the surrounding country and the **awaking** mountains. Then, catching sight of **Stephen Dedalus**, he bent towards him and made rapid crosses in the air, **gurgling** in his throat and shaking his head. **Stephen Dedalus**, displeased and sleepy, leaned his arms on the top of the staircase and looked coldly at the shaking **gurgling** face that blessed him, **equine** in its length, and at the light **untonsored** hair, grained and **hued** like pale oak.

The joy of MacLightning is that it monitors every move you make at the keyboard, and signals whenever it suspects an error. As soon as a word is typed and you press the space bar, MacLightning lets out a beep if the word is questioned. (It does not consider a word as done until the space bar is pressed or until the word is followed by a capital letter or a punctuation mark.) You can then simply backspace over the word and correct it as you go along. When MacLightning beeps a word as possibly in error, you can also check the word by simply pressing the command key and the number 1. The MacLightning dictionary pops up on your screen, opened to the page where the word would fall if it were included in the dictionary, and you can merely select the proper spelling by clicking the correct word. This new selection then occupies a highlighted selection box at the top of the MacLightning window. To paste the selection into your document in place of the misspelled word, you can click the paste icon in the window or press command-2. (MacLightning doesn't automatically replace the questioned word with the selected contents of the highlighted window, to allow you to experiment with the spelling or look around in the dictionary before committing to the replacement.)

MacLightning also allows you to use the dictionary to just look up a word. You can page through the dictionary by clicking on page corners (48 words to a page) or you can skip through the dictionary by selecting one of the letter tabs that are aligned along the side of the dictionary box. In that case, the dictionary immediately opens to the page with words beginning with that letter. If you type a new word in the dictionary window, you can command MacLightning to skip to its page in the dictionary by clicking the lookup icon. In this manner, you can try a couple of spellings, if you aren't sure which is correct.

MacLightning functions simply and rapidly in its interactive mode. Being a RAM-resident application, MacLightning is amazingly fast and checks somewhere between 30 and 68 words per second, depending on whether it is making a first or subsequent pass through the text (since words remain in RAM once they are looked up), and depending on whether a hard or floppy disk is used in reading the dictionary. In any case, MacLightning can stay well ahead of most typists. Even if you do get ahead of the application, and type a few words after a beep, MacLightning will go back to the questioned word and let you make the substitution as long as it has not come to another word it questions. (In that case, it will operate on the latest word.)

Despite the speed and simplicity of MacLightning, listening to 22 unnecessary beeps can be unnerving after typing just a few paragraphs from *Ulysses*. The greatest drawback of MacLightning is the size of its dictionary. Containing only 31,000 words, it is likely to frustrate most writers. This problem promises to be corrected soon, since Target Software has already announced it will use *Merriam Webster's 9th Collegiate Edition* dictionary of 80,000 words in late spring. However, the new dictionary may present space problems. Since the present

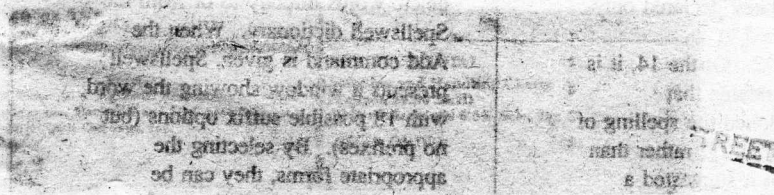
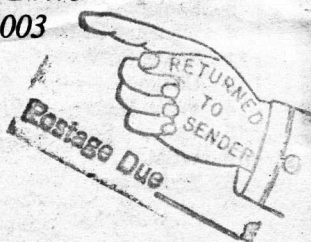
dictionary of 31,000 words already takes up 168.5K on a disk, imagine the difficulties of finding disk space for a dictionary almost three times larger. Unless Target is able to compact their dictionary by using compression algorithms, the new version will be useful only to those owning an external disk drive or, better still, a hard disk.

MacLightning also promises to be able to access other libraries in addition to the standard English dictionary. A copy of *Merriam Webster's Thesaurus* is already announced for release, and other specialized libraries such as medical, legal, or scientific dictionaries are anticipated.

MacLightning also comes with a utility that allows you to create a dictionary or merge a file of words with an existing dictionary. Unfortunately, it is a cumbersome job and only the more determined users are ever likely to take advantage of this utility. It is a lengthy process involving creating a new dictionary in alphabetical order and list format, which is then saved as text-only. Then if it is to be added to an existing dictionary, a new merged dictionary with a new name is created first as a separate document, and then the old dictionary is discarded. Given the size of the current dictionary, disk space becomes an important issue. Updating dictionaries is certainly not designed for the casual, single disk drive user, and it is not a simple matter. More importantly, it is impossible to delete words from the dictionary once added (short of remaking the dictionary), nor can you delete original words from the dictionary.

While MacLightning functions well in its interactive mode, it completely fails to compete with other Macintosh spelling checkers in its review mode, when documents are checked after they have been completed. At the present time, MacLightning is limited to only correcting existing whole documents saved as text-only files. It is, however, possible to check any size

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selection of a document formatted with Microsoft Word. (An upgrade that will allow its use with Pagemaker, MacWrite, Omnis, and Jazz is promised.)

Unfortunately, correcting a Word document with MacLightning is so time consuming, aggravating and awkward that you are much better off with an application like Spellswell or Hayden:Speller for review corrections. First of all, the process of correction involves a sequence of command keys and numbers which ignore the Macintosh interface by requiring you to memorize commands. Secondly, to write corrections into

the text, MacLightning calls up the "Change" dialog box from Word's Search menu, and uses it to let you enter the correct spelling into the text (a function accomplished completely transparently by applications such as Spellswell or Hayden:Speller).

When checking a document or a selection, a separate MacLightning analysis window lists the number of words checked, the number misspelled, the average word length, and the length of the longest word. Why bother? Then a list of the misspelled words is displayed in the order in which they appear in the document. It is often necessary to sort these words alphabetically in order to eliminate repetitions and to be able to do lookups without having to jump back and forth in the dictionary. (MacLightning will sort the words and eliminate duplications for you upon command.) The suspect words have to be acted upon one at a time, and ponderous command sequences are needed to replace words via the change window in Microsoft Word. Then a command-5 is required to get the original listing of misspelled words to reappear, since it entirely disappears each time a substitution is inserted. The process could and should be simplified. Correcting every wrong word in a long document one word at a time would be time consuming and tedious beyond reason. We found MacLightning's review mode to be completely unacceptable.

MacLightning has another idiosyncrasy that takes some getting used to. Imagine that you type a word in the interactive mode and a beep indicates that it may be misspelled. If you backspace over the word and try another spelling, the spelling checker may beep again. If you then decide to go back and use the dictionary, MacLightning will replace the last two words in the text when you give the command to insert the corrected word. Also, in correcting selections in a Word document, we found ourselves with the word to be corrected inserted in the "Change To" window instead of in the "Find What" window because of some deviation in the order in which we did the procedure. The possibility of making errors is also increased by the highly sketchy documentation that presently comes with the application.

After exploring MacLightning, we repeated our Ulysses test using the Spellswell spelling checker from Greene Johnson Inc. Since it's not an interactive desk accessory checker like MacLightning, Spellswell must be opened first and then the document being checked is opened from within Spellswell, as is the case with most Mac spelling checkers. Spellswell declared only 14 errors compared to MacLightning's 22. Of the 14, it is entirely understandable that Spellswell questioned the spelling of "jesuit" with a small "j" rather than a capital and that it suggested a more orthodox spelling of

"dressingdown" (dressing-gown). So really only 12 words from that difficult passage were erroneously questioned by Spellswell: Mulligan, stairhead, ungirdled, intoned, introibo, altare, Dei, Kinch, gunrest, Dedalus, untunsured, hued.

This vast improvement in accuracy over the MacLightning checker is due to the fact that Spellswell keeps 59,950 words in its 186.5K dictionary file. Greene Johnson was able to include almost twice the number of words in a dictionary only 18K larger than Target Software's, due to excellent compression routines. Entirely uncompressed, Spellswell's dictionary would take up 550K. (One need only compare Spellswell's dictionary with the dictionary in Creighton's MacSpell+ to fully appreciate the degree of compression. MacSpell+ puts its 75,000 word dictionary in a 367K file, using almost an entire single sided disk, so users need at least two disk drives, and more likely a hard disk.)

Spellswell's effectiveness is due not just to the completeness of its dictionary, but also to the fact that it comes laden with a variety of useful features. Spellswell reads text-only files, as well as documents created on MacWrite 4.5 and Microsoft Word 1.0 and 1.05. Once activated, Spellswell provides you with the ability to skip or replace a checked word not found in its dictionary, along with the option of skipping or replacing all subsequent appearances of the word, which can be done either by clicking the appropriate box or by using keyboard command sequences displayed in the boxes, so you can operate Spellswell without taking your hands off the keyboard. Unlike MacLightning, the command sequences intuitively make sense: command-R for replace, command-A for add, command-S for skip, command-D for delete.

Spellswell's dictionary has several features which make it unique among Macintosh spelling checkers. It contains a considerable number of proper nouns, like Haydn and Webster. It respects capitalization when it changes a word, and also questions the beginning of a sentence or a proper noun that is not capitalized. With the check capitalization option selected, Spellswell will check the capitalization of abbreviations like Ph.D. It does not automatically assume that words with suffixes such as "s" and "ing" are correct if the root word is correct (thus prohibiting such words as "funs" and "runing"). Spellswell will also check hyphenation, contractions like "didn't", and spacing between words and abbreviations. Unlike MacLightning, it is easy to add or delete words directly to or from the Spellswell dictionary. When the Add command is given, Spellswell presents a window showing the word with 18 possible suffix options (but no prefixes). By selecting the appropriate forms, they can be easily added to the dictionary by

merely clicking the add box or typing command-A. You can also command that a given capitalization must be observed. In a similar manner, a word can be deleted from the dictionary by simply clicking on the delete box or typing command-D. (The root word with its suffixes are not deleted). Unlike MacLightning, Spellswell offers no utility for importing a massive list of words to its dictionary.

At the end of each session, a dialog box gives the option of creating a special dictionary of the "skipped" words (words that were falsely flagged but not entered into the dictionary) from that particular document. When subsequently checking that document, you are asked if the special dictionary should also be used. Using the specific dictionary can greatly decrease the checking/correcting time of a document.

As with MacLightning, the Spellswell dictionary can be used to look up a word by typing some letters in Spellswell's "replace" box. The dictionary window immediately scrolls to the location of that sequence of letters or the nearest thing to it. In addition, you can scroll through the dictionary word

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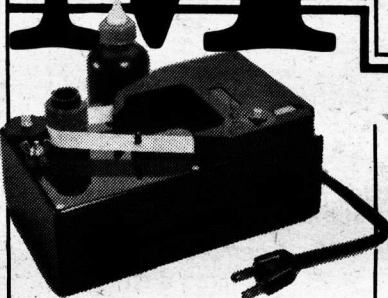
We compared the time it took for Spellswell, MacSpell+, and Hayden Speller to check the first paragraphs of *Ulysses* with 11 spelling mistakes introduced into the text. We didn't include MacLightning in this test as we felt that using it for reviewing whole documents was out of the question. MacSpell+ took 4 minutes 23 seconds, Hayden:Speller took 3 minutes 15 seconds (in word-only mode), and Spellswell took 2 minutes 51 seconds. The times are rough indications because

to be checked all at once, while Spellswell allows documents of any length. While Target Software may have left a few rough edges on MacLightning, Greene Johnson has demonstrated great care with Spellswell. For example, every skip and replace command is followed by a dialog box

that asks if the selected word is to be skipped or replaced throughout the document. Every time you add a word to the dictionary, a list of possible suffixes appears for your selection. In a similar manner, when you give the command to delete a word from the dictionary, a caution box will appear

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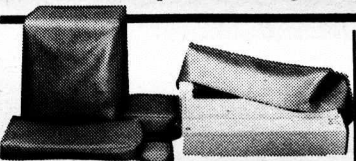
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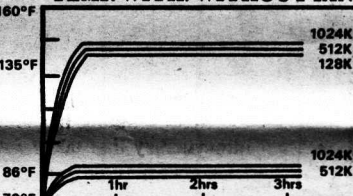
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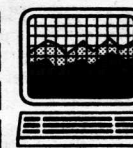
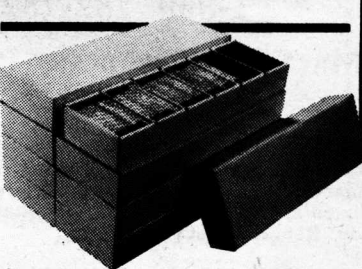
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asking if you are sure you want to eliminate that word.

These cautions and enhancements can be disabled by selecting the quick forms of the add, skip, replace, and delete commands from a "short cuts" menu that appears in the menu bar, or by pressing the option key when selecting the commands, which is good, but Spellswell could be greatly improved if you could save your settings. Such an option is promised in the 1.3 version, expected to appear in June.

In addition to the spelling dictionary, Spellswell comes equipped with a homonym dictionary allowing you to check all words that sound similar to other words, but are spelled differently. Thus, when a word like "to" appears, Spellswell flags it to make sure you didn't mean to use "too" or "two". Homonym checking can be entirely disabled from

the menu bar or can be stopped at any time from the homonym window. Otherwise it works in a manner similar to the spelling checker in providing options for substitutions which can be accepted or rejected. Like the spelling checker, its settings are not remembered from one session to the next, and unlike the spelling checker, its dictionary can be edited with ease using MacWrite or Microsoft Word because it's not compressed. As a result, the homonym dictionary can be edited for personal use to remember acquaintances with similar sounding names that are spelled differently (such as Bierman and Beerman) or can be cut to eliminate words you never confuse (such as bier and beer).

We were greatly impressed with the considerable amount of thought and thoroughness in the planning of Spellswell. While it does provide a bewildering number of options, its carefully structured dictionary and features allow Spellswell to catch mistakes which would be overlooked by other spelling checkers. Because of its thoroughness, Spellswell suspects fewer valid words than any spelling checker available for the Macintosh with the possible exception of MacSpell+, which has a large dictionary. The promised Spellswell upgrade will allow you to save settings, provide a preview mode which lists the suspect words out of context, allow foreign languages with cedillas, tildes, accents, and so on, allow better use of numbers (like 5th Ave.), and

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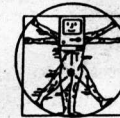
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*10 iterations of Sieve Benchmark from Byte, Jan. 1983. TML speed from Macintosh June 1986. C speed from Byte, Nov. 1985. Softworks BASIC time from MacTutor-June 1986.
 **Compile from editor to stand-alone application. RAM disks not used.
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improve the user interface. While Spellswell works well as a stand-alone spelling review checker, it can also be configured along with your word processor in Switcher to enable you to rapidly move from writing to reviewing.

Compared to MacLightning, Spellswell is less pretentious in its packaging (MacLightning comes in a hard plastic case), but reflects considerably more care and thought in its interface, documentation, and features. Unlike Spellswell, MacLightning does not check capitalization, does not understand abbreviations like Ph.D., does not allow numbers like 44th, does not understand contractions like didn't, does not check hyphenation, does not check spacing, and does not check homonyms (it doesn't even know the word). Nonetheless, MacLightning fills an enormous void with its interactive mode, and its usefulness should be obvious.

The two applications function very differently, but in an ideal MacUniverse, a spelling checker would incorporate elements of both. MacLightning and Spellswell are recently released products. Small improvements, like the larger dictionary and better designed interface for

MacLightning, and the ability to save settings for Spellswell, promise to make considerable differences. Those enhancements are due soon, and we would recommend looking for them if you think of purchasing either application.

Club Notices And Newsletters

Publications Received For The First Time

Apple Gram, \$20/year, Apple Corps of Dallas, Box 5537, Richardson, TX 75080, (214) 387-9800.

The Atom's Apple, \$10/year, Space Coast Apple Users Group, Box 2112, Merritt Island, FL 32952, (305) 452-8357.

The Doctor's Journal, \$20/year, Dr.'s of Macology Macintosh Users Group, Box 177, N. Platte, NE 69103, (308) 534-8776.

The Forum (inside *The Stack*), \$12/year, Long Island Macintosh Users Group, Box 518, Seaford, NY 11783, (516) 541-3186.

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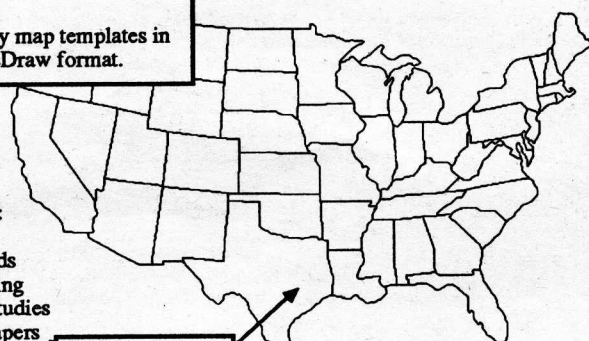
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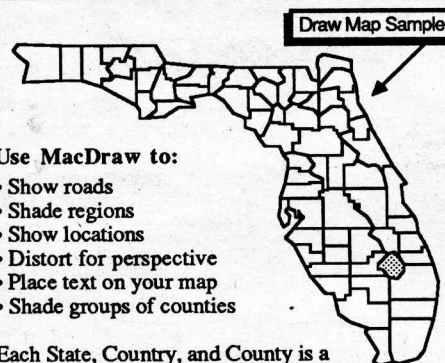


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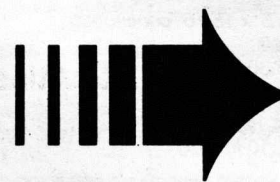


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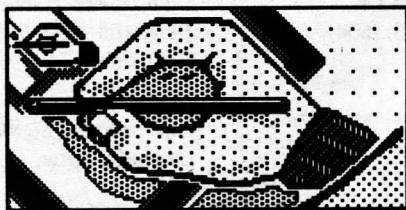
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Joseph H. Oliver III, Glendale, CA: A colleague and I both use our Macs at Mid-City Alternative School, a K-12 school in Los Angeles. The Macintosh is used to produce the school newspaper, lesson plans, report cards, letters, and animated science demonstrations. Students are also offered a computer class which utilizes the Apple IIe as well as the Mac.

John Gibson, Princeton, NJ: I use a Macintosh Plus mostly for text and music processing.

Philip Levine, Windham, ME: I operate a publishing business with my Macintosh and a new Laserwriter, making personalized astrological calendars and reports.

Murray Somers, Stuart, FL: I use my Macintosh as an investor and for some club bulletin work.

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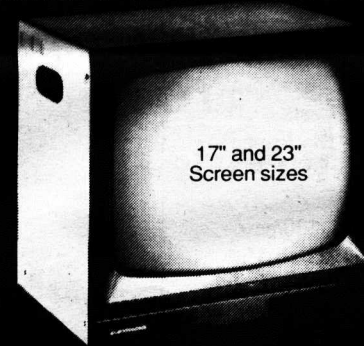
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Received, But Not Yet Reviewed

This list is not compiled from press releases, but only from real products that have actually arrived at our office.

MacBriefs, the "resource digest for Macintosh enthusiasts".

\$12/year (six issues), MacBriefs, Box 2178, Huntington Beach, CA 92647, (714) 842-0518.

MacTimes, "an independent Macintosh publication". \$18/12 issues, MacTimes Inc., Box 490, Franklin Sq., NY 11010, (212) 614-8300.

The Macintosh Buyer's Guide (Spring 1986), a quarterly directory of available products. \$14/year, Redgate Communications Corp., 3381 Ocean Dr., Vero Beach, FL 32963.

ZBasic, an interactive BASIC compiler for the Macintosh. \$89.95, Zedcor, 4500 E. Speedway #93, Tucson, AZ 85712, (602) 795-3996.

Learning Microsoft BASIC for the Macintosh, a book by David A.

Lien. \$19.95, ISBN 0-932760-34-1, CompuSoft Publishing, 535 Broadway, El Cajon, CA 92021, (619) 588-0996.

The LisaTalk Report (Spring 1986), a quarterly publication for Lisa and Mac XL users. \$42/year, The NetWorkers, 21 Canyon Rd., San Anselmo, CA 94960, (415) 258-9152.

Excellent Exchange Catalog, a directory of Excel templates and programs. Free, Heizer Software, 5120 Coral Ct., Concord, CA 94521, (415) 827-9013.

CatMac, a disk catalog lister for the Macintosh. \$10 (shareware), Phenix Specialties Inc., 2981 Corvin Dr., Santa Clara, CA 95051, (408) 733-9625.

The Macintosh Journal, an "independent periodical published monthly except for January and August". \$30/year, B & P Publishing, Box 1341, Provo, UT 84603, (801) 375-4947.

Macworld, a monthly publication for Macintosh users. \$30/year, PC World Communications Inc., 555 De Haro St., San Francisco, CA 94107, (800) 525-0643.

Desktop Publishing, a bimonthly magazine. \$24/year,

Bove & Rhodes Assoc., Box 5245, Redwood City, CA 94063, (415) 364-0108.

MacBillboard, a bitmap editor for the Macintosh. \$35, CE Software, 801 73rd St., Des Moines, IA 50312, (515) 224-1995.

San Diego Macintosh Public Domain Catalog, describing 80 disks. San Diego Macintosh User Group, Box 12561, La Jolla, CA 92037.

Educomp's Macintosh Public Domain Software Catalog. \$1, Educomp, 2429 Oxford St., Cardiff, CA 92007, (619) 942-3838.

This Month's Mailbag

The Benefits Of New Feet

I notice you haven't yet reviewed Tacklind Design's MouseEase mouse feet, so I'll do it. They're great! You get four white teflon pads with self-adhesive backing. Two are punched to fit over your mouse feet (or what's left of them), and the other two can be put at the other end of the mouse. I installed all four, and my mouse is now better

than new! When I noticed that 75% of my mouse feet were worn off, I bought a mouse pad. I no longer use it, because the teflon feet give a better feel, and I'm not restricted to mousing in a particular area. And, the teflon/pad combination doesn't work well. The teflon feet don't seem to be wearing out after two months of heavy use. MouseEase is a godsend to those with worn mouses, and a bargain (\$1.95) besides.

David Dunham, Goleta, CA

Novocaine Ramblings

I started reading *Signal* #26 at my dentist's office surrounded with all the mechanical requirements for preparing a five-tooth bridge. I finished it cover to cover before the novocaine wore off.

One note for the features editors. Please include the date somewhere in the article. The interview with Dan Smith was interesting, but I found myself asking "When did he say that?" And, if the votes be counted, I prefer reading the copy in three columns rather than four.

I want very much to make both the Lisa and Mac folks understand one fact. Prior to either system, there was precious little more than

"well-conceived and polished"

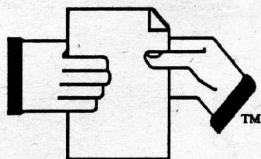
— John Dvorak, *InfoWorld*

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— David Smith, *MacTutor*

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— Charlie Jackson, *MACazine*



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frustrated discussion and concern in the computer dealer/sales community about such aspects of personal computers as user interface, format standardization, graphics capabilities, even icons. Hours of personal research and many thousands of dollars were needed to find and acquire a machine with such capabilities. Four years ago, a laser printer was so expensive that I could not personally conceive of owning one. Now, I can pick one up on an Apple credit card.

I realize this is hardly insightful, but the progress of recent technological development remains, and we take it for granted. We forget where we were. Now we look through the ads and wait for the price to come down.

Conservative machine purchasers are beginning to understand the advantages of the "non-IBM" environment. PC developers are searching the Mac-like software for product ideas. Witness the truly stunning acceptance, without credit or thanks, of the Finder-like programs on blue clones. Apple had to bring suit to GEM to acknowledge their inheritance. What was the last innovative program that originated on a PC?

Put it another way. If the Lisa/Mac was not available when you bought your machine, what would you have bought instead?

Our present needs and hopes for potential computer uses have

mushroomed. We can now more easily visualize our problems, and so doing, we see more (pieces?) of the solutions, and so see more problems, and so on. We would be a cult if there weren't so many of us.

None of this is meant to condone the treatment the Lisa community has received at the hands of the manufacturer and dealers. I confess to coveting that product for two years. But Lisa proved to us, and your editors remind us, that "you puts down your money and you takes your chances". It demonstrates how the world economy can affect us. No excuses here, but she slunk onto the economic stage and found the action priced too high. HP, TI and the other old boys got the fat trade.

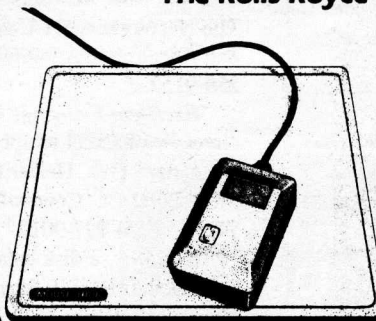
Four-years down the road, the balance sheets have changed. The Mac is a phenomenon, fait accompli, with a developer attrition rate, judging from the ads, down around the 2-5% level. The start of a maturing market cycle? It might make sense to re-market the Lisa. Apple ("Steve", almost) tried once. It still has the money to do it, but it's not run that way any more.

My guess is, the current group (read *committee*) is astride the fence, faced with an identity crisis. Looking to their left, they can continue the image of the pro-user company and support the Lisa despite inside and outside pressures: "Sure, we ought to keep her alive, at

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least long enough to move the neat stuff up to the Mac. Best hacker machine we ever built. No way she dies. The Apple II should be dropped first. I mean, talk about old!"

The view to the right is a lot blue-er (as in "chip"). On that side is a lot of money and power, held together by a goodly dollop of greed: "It's not easy keeping three products in the air. If we settle for the market penetration we have now, we're crazy. We can't take any less on a new product and we shouldn't split our resources. Look at the Plus, announced in the 3rd quarter and now it's double the orders of the 512. Lisa versions of all Mac

software feels too dicey for me. Wouldn't be surprised if she got 3rd party-ed."

Hurts your head, doesn't it. Lest we forget, if we want it our way, we must do it ourselves.

The Mac group gets only marginally longer shrift. I have to order most software sight unseen. I still have to beg my dealer to tell me when a new release or upgrade is available, and they're still too expensive. You think new cars lose their value? The money I used in '84 and '85 on my 512K system will buy two new Mac Pluses.

What am I offered for a used 400K external drive? I can put my name on the waiting list, upgrade to

800K (à la internal drive) for \$300 or so, but I have to pay for the second set of ROMs. Excuse me, is this where I bend over and say thank you? Honestly folks, production planning and product development have the first seven letters in common. Vision, they got. It's forethought they lack. End of complaining.

The \$125 that I spent for the *Inside Macintosh Supplement* through the Developer's Group was a bargain: forty pounds of information, including a brand new copy of *Inside Macintosh* and \$80 (at the time) in disks, half of which are Lisa software. (I'd love to know if any of the Lisa disks are worth



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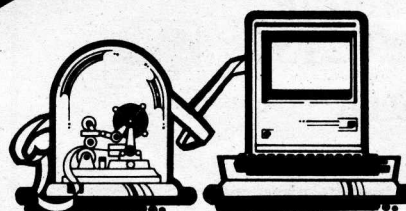
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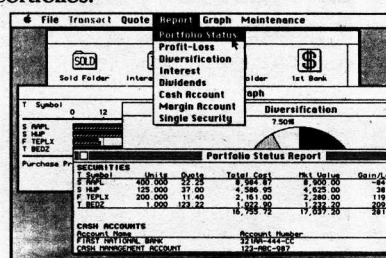
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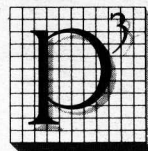


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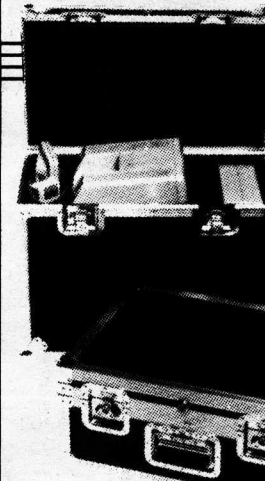
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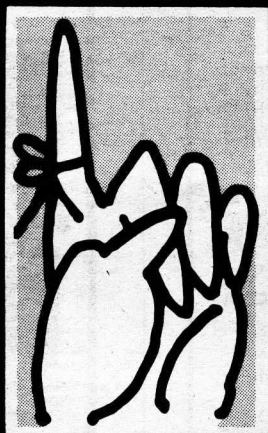
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keeping. I've kept them in case someone needs them, but my dealer no longer even has a machine to try them on. Do you know which ones to save and which to re-use?)

I'm often frustrated by the Pacific to Atlantic delay. For mail, it's a good week, two if there's a holiday, but product information (2nd class) takes longer. I want to subscribe to a bulletin board, but need help making the choice. An article of product comparisons or user letters would be much appreciated.

Does *Signal* have a "products we'd like to see" column? I'm interest in finding: a system tool for programming standardized unremovable desk accessories, a programmable desk accessory interface to external hardware, a cash drawer system.

Perhaps I should also ask who is addressing problems like: a turn-key system for the handicapped (insert disk = on,

eject disk = off), speech and language interfaces for stroke therapy and language instruction, invalid care monitors, analog/digital metering and display, 100% duty cycle power systems.

I'd appreciate contact from anyone interested in any of those areas.

In *Signal* #26, the editors posed the idea of a machine with 8 to 16MB of memory and no disk, that would tape cache the working RAM contents in the event of power failure. (I find discussions like this irresistible. I am also gullible enough to believe that you're not putting me on. With a chortle of relish, I dutifully choose my role of, first, hype groupie, or second, "eliminator").

The basic idea seems sound. Once loaded, the user could hop between applications that are already in memory. Saves lots of wristwatch time. No hard disk

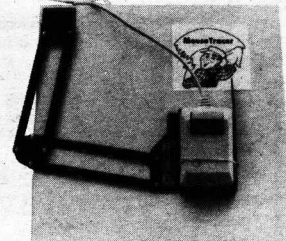


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constantly spinning itself to destruction while you work. That's admirable. The tape cartridge interface medium enthralls me not at all.

The economics of tape are problematic. Tape is temperature, humidity and, I swear, operator sensitive. I've seen them work for one person and not another. A good tape (underline *good*; unlike disks, bad tapes may work the first time) will cost you dinner downtown. And tape drives today are the second most frequent cause for emergency repair. (First is keyboards.) If you have to turn the machine off to fix the tape drive, you're trashed.

But let's buy a good one, and assume that the tape media doesn't add to the per copy cost of the software. After all, you're going to make skads of these beauties, so figure the reliability improves and the costs come way down. Load time for, say, half of the smaller 8MB machine at the rate of about 12KB per second on a 15IPS, 6250BPI serial drive with no parity and a perfectly efficient controller would take almost six minutes.

Loading 14MB of the larger 16MB model would require about twenty minutes. We'd certainly have to change our work habits. No power downs at lunch. Also, that tape is sequential. Unless you don't care in what order the data is read, the process of searching a tape for one file is tedious at best. Where do we position the tape to

prepare for a possible power loss?

How about this? Forget the tape, keep the big memory and the diskette. Keep 4MB for working storage and table the rest as permanent RAM. You only need it to launch from. If the power dies, cache out the working storage to permanent RAM. The battery power requirement would drop to a realistic level. Load time would be minimal. If the system marked applications in use and flagged changed files, you could test it by having someone toggle the power switch while you work on a document. When you buy a new program, a utility mirrors the diskette to permanent RAM, and you then file the diskette in a safe place.

Actually, I'm almost certain that I read about a similar machine sometime in the last year, though I'm stumped on where I saw it. Permanent RAM is available, though as yet it's slower, expensive, needs more power to write, is physically larger, and probably needs a better than normal radiation shield (since it isn't constantly re-written) to insure the stability of memory contents. It's the best bet yet as a practical replacement for core memory.

Unfortunately, we're at the point in time when a system will need a straight expansion path to 70+ megabytes of online storage in some form to survive a complete market cycle. Non-volatile

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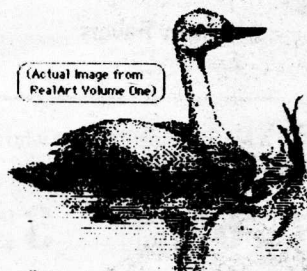
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